2013 Diversion and Disposal Report

A summary of solid waste management in the State of Vermont

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Solid Waste Program

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VERMONT
AGENCY OF NATURAL RESOURCES
Department of Environmental Conservation

Introduction

The Waste Management and Prevention Division's Solid Waste Program respectfully submits the Program's Annual report describing how solid waste was managed in Vermont during the 2013 calendar year. In previous years, this report has been submitted in a strictly table-based format. It is hoped that the additional narrative will clarify the derivation of the figures.

In 2012, the Universal Recycling (Act 148) law was signed unanimously by the Vermont legislature. This new solid waste legislation focuses on increasing the convenience and choices available in the state for the proper management of recyclables and organics. In 2014, the State's new Material Management Plan (MMP) was adopted with significant changes and new performance measures in comparison to the previous 2006 Solid Waste Management Plan. Additionally, in 2014 construction and demolition debris management was afforded significant legislative attention with the passage of Act 175 outlining guidelines for Architectural Waste Recycling. Given the substantial changes that have occurred and are anticipated to continue developing within Vermont's waste materials management systems, the program saw an opportunity to re-evaluate the structure of the annual Diversion and Disposal report. This restructured report has been created with the intent of better pairing the Disposal and Diversion report with the newly established goals and standards of Vermont material management. It more accurately reflects the diversity of information needed to make informed decisions and future management plans.

It should be noted that the data and information presented within this report is primarily based on data that is required to be submitted annually by permitted solid waste facilities across the State. All permitted solid waste facilities (including landfills, transfer stations, material recovery facilities and organics management facilities) are required to provide the Program with detailed information on the flow of solid waste under their management. As such, the data presented in this report is only as reliable as the data submitted. Though there is some quality control maintained over the submitted data, it remains likely that there are inaccuracies in the reporting. On a statewide basis, it is believed that these inaccuracies only have a minor influence on the compiled information present within this report. Additionally, it has been necessary to utilize estimates based on information collected during earlier comprehensive waste composition studies or other work in order to complete the description of materials management within the State. When an estimate from another source is used within the report it is notated and cited. The program believes that the methodology utilized in the development of this report is based on sound principal, and that the new Diversion and Disposal report structure continues to present comparable information to that of the older reports, such that past comparisons and future projections can continue to be made. Future Diversion and Disposal Reports will build off of this foundation so that annual comparisons can better be evaluated.

Report Sections

List of Tables and Figures:

References

2013, DSM Environmental Services, Inc., Tellus Institute and RLS. System Analysis of the Impact of Act 148 on Solid Waste Management in Vermont: Final Report. Prepared for Vermont Department of Environmental Conservation, Solid Waste Management Program.

2002, DSM Environmental Services, Inc. Vermont's Municipal Solid Waste Diversion Rate: 2001; Results of Recycling and Reuse Survey. Final Report. Prepared for Vermont Department of Environmental Conservation, Solid Waste Management Program.

Executive Summary

In 2013 Vermont generated 584,568 tons of municipal solid waste (MSW). This total is a *decrease* of 1.3 percent over the 592,132 tons generated in 2012, despite a slight population growth. Of the solid waste generated in the State, the established materials management system resulted in the diversion of 190,797 tons of materials and the disposal of 393,771 tons. The resultant 33% diversion rate is comparable to the 33% average diversion rate of the last 16 years, but lower than the 35% diversion rate in 2012. However, it should be noted, and is described in the report, that some of this difference can be accounted for by the exclusion of estimates previously used in the diversion totals calculation. Older estimates of diversion activity were removed or updated in favor of estimates from more recent and relevant waste composition studies which align with modern materials management in Vermont. With the advent of Universal Recycling (Act 148) implementation in 2013 and the adoption of the 2014 Vermont Materials Management Plan, it is expected that 2013 will be among the last years where State diversion rates remain at this stagnant level. State-wide goals are to reduce the disposal of municipal solid waste and increase diversion rates to 50% by 2020 at the *latest*.

Approach: Tracking the Flow of Vermont's Solid Waste

Within Vermont, public and private solid waste facilities are required to submit annual or quarterly reports to the Solid Waste Management Program ('Program') on the types, amounts and management of solid waste materials handled by their facility. Facilities include, but are not limited to, transfer stations, material recovery facilities, compost facilities, landfills, and recycling centers. In 2013, this information was all collected through the use of online submission software, ReTRAC Connect™, which was customized for the Program by Emerge Knowledge Inc. Supplemental data has also been collected from other Division's within the Department of Environmental Conservation that manage specific components of the Vermont solid waste stream, namely biosolids data from the Residuals Management Section of the Watershed Management Division. In some cases, estimates from previous detailed analysis of the Vermont's material management system are also used. These alternative data sources are noted throughout the report as appropriate. It is likely that this approach to tracking the flow of solid waste throughout the state underrepresents the solid waste managed within the state. This is particularly true with regard to non-residential waste. Often commercial and industrial waste does not pass through a permitted Vermont facility as it may be backhauled or transferred directly to a market.

The Program has the greatest control and confidence in tracking the final management activities of the State's waste materials. With only a few landfills within the state and a limited number of transfer stations and material recovery facilities that sell directly to markets or reuse materials, the end-management data aggregated by these types of facilities has the highest likelihood of being consistently and reliably tracked and reproduced. The ability to document the source and generation of solid waste is a much more challenging task. With a wider variety of types of facilities and collection points within the Vermont, generation data collection is often incomplete and inaccurate. The Program recognizes that this is an area that can be improved; however, it is unlikely that generation data will be as reliable as the disposal and diversion data within the near future. For this reason, the information presented within this report is a calculated generation value based on the summation of the tonnages reported from final management activities. In its most simplistic format:

Disposal (tons) + Diversion (tons) = Generation (tons)

I. Disposal Activities

Disposal at Vermont Facilities — In 2013 there were four permitted and operating solid waste landfills within Vermont (Table 1). Together these landfills accepted 78% of the disposed solid waste generated within Vermont (Table 2). The remaining 22% of Vermont's disposed solid waste was transported, either directly from the source or from a facility, to an out-of-state (OOS) facility (Figure 1, Table 3).

The landfill in Moretown, VT, operated at reduced capacity in early 2013 prior to its closure in July 2013. This resulted in a substantial change to the flow of solid waste in Vermont in comparison to previous years. While rates of disposal at the New England Waste Services (NEWSVT) landfill in Coventry, VT increased, there was also an approximate 53% increase in the tonnage of solid waste that was sent out of the state for disposal in comparison to 2012.

Table 1. Status of Vermont landfills that were permitted for waste acceptance in 2013

Solid Waste Landfills	Location	Status	Permitted Fill Rate (tons/year)
New England Waste Services, Vermont (NEWSVT):Phase IV: Cells 1-4	Coventry	Operating, completed construction of Cell 4 in Fall 2014	450,000
Moretown Landfill, Inc. (MLI): Cell 3	Moretown	Ceased operations in July 2013	---
Bristol Landfill	Bristol	Operating, unlined	1000
Salisbury Landfill	Salisbury	Operating, unlined	1000
Greater Upper Valley Solid Waste District – Hartland: Phase 1 North	Hartland	Permitted no current plans for construction, not operating	50, 000
Northwest Solid Waste District – Sheldon: Cell 1	Sheldon	Permitted, no current plans for construction, not operating	20,000

Table 2. In-state and Out-of-State (OOS) materials disposed *within* Vermont landfills, as reported in 2013

	Total Tons	OOS Tons	VT Tons
	(as reported by disposal facilities)		(Total tons minus OOS tons)
MSW	351,392	---	351,392
C&D	7045	4503	2,542
Sludge (WWTP)	30,036	8021	22,015
Asbestos	11,859	11,220	638
Ash	979	911	67
Contaminated Soil	22,273	14,413	7,860
Sewer Grit	762	8	754
Paper Sludge	523	---	523
Medical Waste	67	---	67
Other	15,532	15,222	309

Disposal Occurring Out-of-State — Documentation of Vermont waste disposed OOS is derived from two sources. Facilities report the quantity of materials that they have sent OOS for final management; however, this does not capture materials that are hauled directly OOS without passing through a Vermont facility. For this reason, an independent audit is also completed annually, collecting data from OOS facilities that are known to manage Vermont solid waste. The auditor reports these values annually to the Program.

Table 3. Solid waste sourced in Vermont but disposed at an Out-of-State facility

	Connecticut	Maine	Massachusetts	New Hampshire	New York	Total
MSW	114	2268	4729	39882	53447	100440
C&D	---	---	---	7875	6550	14425
Other	---	---	---	---	1283	1283
Total						116147

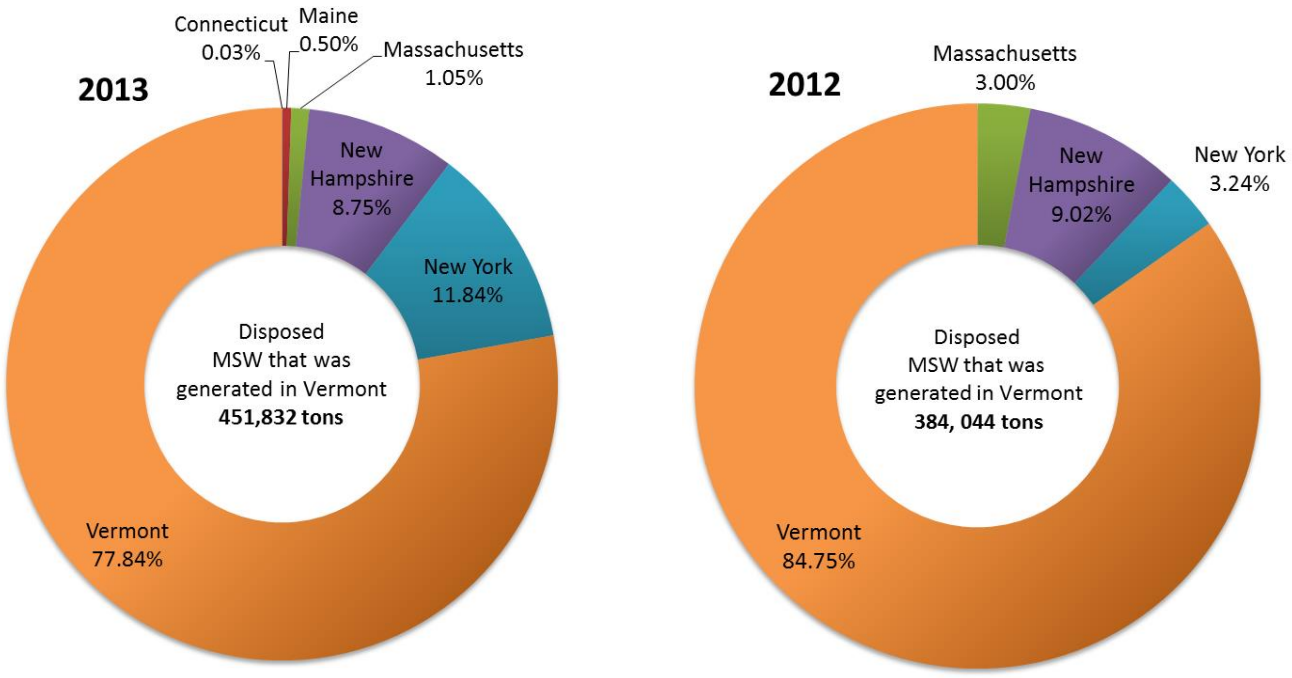

Figure 1: Destination of disposed MSW that was generated in Vermont in 2013, with 2012 data for comparison. While the majority of MSW stays within the State for disposal, 22% was transferred out of state for disposal at landfills or incinerators, primarily in New York and New Hampshire

Beneficial Use in Vermont Landfills — In addition to the disposal of materials within Vermont's landfills, there are several material types that can be used for beneficial purposes within the necessary operations of the landfill (Table 4). Although these materials are used in place of virgin materials for daily cover and operations, their ultimate end use is within the airspace of the landfill, and is therefore not included in MSW disposal or the diversion tonnages.

Table 4. Beneficial use of solid waste materials within Vermont landfill operations

Material	Use	Tonnage
Contaminated Soils	Landfill Alternative Daily Cover	10,967
Foundry Sand	Landfill Alternative Daily Cover	637
Paper Sludge	Landfill Alternative Daily Cover	657
Sand Blast Grit	Landfill Alternative Daily Cover	122
Sludge – cut with soil	Landfill Alternative Daily Cover	8,954
Asphalt, Brick, Concrete	Landfill Road Base	2,236
Ground C&D	Landfill Road Base	4,198
Sawdust	Landfill Road Base	496
Wood Debris	Landfill Road Base	936

Adjusting MSW for Construction & Demolition Debris – Historically, and in this and future reports, Construction and Demolition (C&D) materials are tracked separately from MSW and are not included in the residential waste disposal totals. Although some C&D materials are tracked individually, it is often difficult to separate these materials from the municipal solid waste (MSW) stream given the current materials management systems in the state. Loads of disposal materials are often co-mingled at transfer facilities and reported solely as MSW. For this reason, the results of the 2013 waste composition study performed and prepared for the State of Vermont by DSM Environmental, is utilized to estimate and differentiate the C&D and MSW components of reported disposed materials. Manual and visual separation of MSW materials during the waste composition study indicated that 10.2% of residential MSW consisted of C&D waste, and made up 15.5% of the sorted Industrial, Commercial and Institutional (ICI) MSW(2013, DSM Environmental). As residential and ICI waste tonnages are not differentiated within the values reported by facilities, an average of 12.85% was utilized to estimate the component of reported tonnages that was realistically MSW and/or C&D waste (Table 5).

Table 5. Adjustment of MSW tonnage for estimated C&D component

	Reported Tonnages	C&D tonnage (12.85% of total)	Remaining MSW Tonnage
Vermont MSW In-state Disposal	351,392	45,154	306,238
Vermont MSW Out-of-State Disposal	100,440	12,907	87,533
Total Vermont MSW Disposal			**393,771**

II. Diversion Activities

The diversion of materials from the solid waste stream destined for a landfill occurs through a variety of pathways in Vermont. While the Solid Waste Management Program has reliable reporting systems in place on some components of these diversion pathways, others are not directly reported and require approximation. Broadly, there are four principal avenues of material diversion which are accounted for by this report (Table 6):

Group A – ***From a Reporting Facility to a Market***

As with the data regarding disposal, the majority of the State's ability to capture the flow of diverted materials within Vermont comes from self-reporting by facilities. Within Vermont there are currently four material recovery facilities (MRF's) that manage the majority of diverted recyclable materials. These facilities collect, sort, and process materials for distribution to recycling markets. As permitted solid waste facilities, they report quarterly to the Solid Waste Program. Additionally, some materials that are collected by transfer stations and recycling centers do not require further separation and can be sold directly by the collection facility to market. Within Vermont, the direct transfer of marketable materials from a collection facility to market is largely limited to large bulky items such as scrap metal and tires. Eighty-five collection facilities reported selling some type of material directly to a market without the use of a MRF.

There are also 14 compost facilities within the State that are certified for the diversion of food scraps and/or leaf and yard waste from the solid waste stream. As these materials are managed and processed by organics facilities for resale or reuse as a new soil product, the tonnages reported are also included in this group.

Group B – ***Estimate of Direct to Broker or Market***

In some cases, the recovery of materials occurs directly between business entities and brokers, thereby bypassing a reporting Vermont solid waste facility. In a 2001 Vermont Diversion Rate study (2002, DSM Environmental), a survey of Vermont employers and manufacturing facilities identified and estimated the amount of recyclable materials that were either backhauled or sold directly to a broker by the business sector. On the basis of an extrapolated survey, this study estimated the tonnage of fibers, containers and scrap metal delivered directly to a broker or market in 2001. Because "economic recycling" was shown to be a significant contributor to the diversion of materials, these estimates have been included in the annual Vermont Diversion and Disposal Report since the completion of this study. As packaging and economic recycling trends have changed since 2001, these estimates are certainly of limited accuracy and should be updated in the future. The other category of material types sent directly to a broker without passing through a Vermont solid waste facility is the estimated 17,480 tons of beverage containers collected and processed through the Vermont Bottle Bill for distribution to market (Table 40; 2013, DSM Environmental). As Vermont redemption centers are not considered solid waste facilities, they are not required to report annual tonnages on this important diversion activity.

Group C – ***Reported Reuse Activities***

There are numerous reuse, resale and repair businesses throughout Vermont; however, the diversity of material reused across the State makes estimates of this activity difficult, highly variable and inaccurate. For that reason, this report is limited to listing reuse totals derived from facility reporting. In other words, only materials collected at permitted solid waste facilities for the purpose of local reuse are captured. As an example, the majority of the reuse tonnage reported here is listed under containers and represents ground glass which is utilized in local projects, often as road base material. Reported reuse does not capture the vast amount of materials that are taken from the point of generation (residences, businesses, etc.) directly to a reuse or salvage store, or re-purposed at the point of generation.

Group D – *Estimated Household Composting*

A 2001 study on Vermont's Municipal Solid Waste Diversion Rate outlined an approach for estimating rates of backyard composting for both yard waste and food scraps (2002, DSM Environmental). This estimate is based on a Vermont survey which identified that 39% of Chittenden county households were composting yard wastes, while 29% composted food scraps. With estimates of 250 pounds of yard waste and 350 pounds of food scraps composted per household per year, and an estimated 323,920 Vermont households in 2013, the resultant home composting estimates for 2013 are: 15,791 tons of yard waste and 14,738 tons of food scraps. This 30,529 tons of organics managed in 2013 by home composting is likely an underestimate as rates of home composting have likely increased since 2001. With the advent of Universal Recycling within the State, home composting is likely to continue increasing as a diversion tool, and more work is required to refine these numbers and provide better estimates for future reports.

Table 6. Summary of Vermont's 2013 diversion activities.

(in tons)	Fibers	Containers	Single Stream	Scrap Metal	Organics	Miscellaneous
A- From Reporting Facility to Market	50,297	5,600	17,375	6,356	16,926	4,650
B- Estimate of Direct to Broker or Market (Economic Recycling)	33,495†	17,480 117†		251†		
C- Reported Reuse Activities		7,309				412
D – Estimated Household Composting					30,529†	
	A + B + C + D = **Total Diversion: 190,797**					

† Denotes an estimate derived from the Vermont's Municipal Solid Waste Diversion Rate 2001 study (2002, DSM Environmental). See above descriptions of the diversion groups for details.

It should be noted that there is one significant difference between this 2013 diversion tonnage calculation and previous years. Previous calculations of diversion totals included an estimate of scrap metal materials that were directly managed by scrap yards and metal processors without passing through a reporting Vermont solid waste facility. The estimate of 34,830 tons of scrap metal was derived from a 2001 survey of metal processors within Vermont. Scrap metal markets are notably variable and it is highly unlikely that this tonnage has remained at this level over the last 13 years. Should a better estimate become available, it would be reasonable to include this tonnage in the diversion totals; however, as of this year, this estimate has been excluded. As a point of comparison; however, for this year only there are two tables presented (Tables 7a and 7b) in the summary portion of this report. Table 7a shows the summary with the historic methodology of this scrap metal estimate being included in the diversion totals, while Table 7b shows the diversion numbers under this new methodology. The exclusion of the previously estimated 34,830 tons of diverted scrap metal does result in a lower final diversion rate in comparison to previous year's methodologies.

III. Total MSW Generation and Summary

On the basis of the previously stated formula:

Disposal + Diversion = Generation

Vermont generated **584,235 tons** of municipal solid waste materials in 2013.

It is recognized that this figure is an under-representation of the complete material management tonnages for the state, but it does accurately represent the components that the Solid Waste Program can accurately and consistently reproduce and track year to year for meaningful comparisons. This total generation figure is stripped of as many dated estimates as possible at this stage of development of the State tracking system, and is an improvement upon the methodologies of the past decade.

- 2013 diversion and disposal rates indicated relatively consistent solid waste management habits by Vermonters in comparison to previous years. This year's diversion rate of 33% is the average diversion rate over the last 16 years (Figure 2, Table 7). Universal Recycling (Act 148) was adopted in May of 2012, and is the most substantial update to the Vermont material management system in nearly 25 years. It should serve to greatly increase diversion rates in coming years, with implementation of the law taking off in late 2013. Vermont residents continue to generate approximately the same amount of waste and divert similar volumes as they have for the past 16 years (Figure 3).

- At 2013 disposal volumes (~440,500 tons disposed in Vermont), Vermont will need 4,405,000 tons of landfill capacity over the next 10 years. There is approximately 4,800,000 tons of licensed capacity currently available within the state.

- The State remains committed to reaching a 50% diversion goal by 2020 in order to achieve lower solid waste management costs, have a positive impact on the environment, and lessen the need for additional solid waste disposal capacity development.

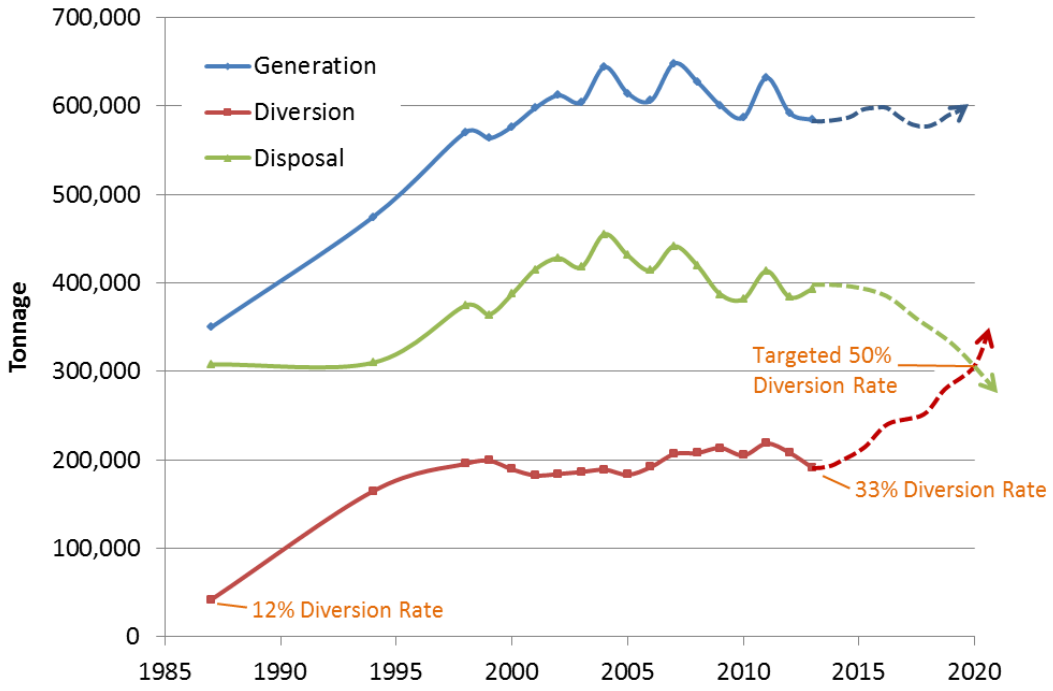

Figure 2: Projections of waste generation, diversion, and disposal with the implementation of Universal Recycling over coming years

Table 7a. Vermont generation, diversion and disposal totals for municipal solid waste. Includes tonnages, per capita breakdowns and percentage rates. Using historical diversion rates which include 34,830 tons of scrap metal which have been and will be excluded in future diversion tonnages (see Table 7b)

	1987 [1]	1994 [1]	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Generation (tons)	350000	474800	570750	563564	576797	597811	612279	604442	644327	614519	606276	648347	627811	600872	587127	632084	592132	619065
Diversion (tons)	42000	164830	195930	199301	189401	182562	184149	186407	189047	183289	192003	206648	207854	213626	205156	218567	208088	225627
Disposal (tons)	308000	309970	374820	364263	387396	415249	428130	418035	455281	431230	414273	441699	419957	387246	381971	413517	384044	393438
Population [2]	535000	583836	600416	604683	609909	612225	615250	617101	618794	619736	620778	621254	621270	621750	625741	626592	625953	626630
Per Capita MSW Generation (Tons/Year)	0.65	0.81	0.95	0.93	0.95	0.98	1	0.98	1.04	0.99	0.98	1.04	1.01	0.97	0.94	1.01	0.95	0.98
(Pounds/Day)	3.58	4.46	5.21	5.11	5.18	5.35	5.45	5.37	5.71	5.43	5.35	5.72	5.54	5.32	5.14	5.53	5.18	5.41
Per Capita MSW Diversion (Tons/Year)	0.08	0.28	0.33	0.33	0.31	0.3	0.3	0.3	0.31	0.3	0.31	0.33	0.33	0.34	0.33	0.35	0.33	0.36
(Pounds/Day)	0.43	1.55	1.79	1.81	1.7	1.63	1.64	1.66	1.67	1.62	1.69	1.82	1.83	1.92	1.8	1.91	1.82	1.97
Per Capita MSW Disposal (Tons/Year)	0.58	0.53	0.62	0.6	0.64	0.68	0.7	0.68	0.74	0.67	0.67	0.71	0.68	0.62	0.61	0.66	0.61	0.62
(Pounds/Day)	3.15	2.91	3.42	3.3	3.48	3.72	3.81	3.71	4.03	3.66	3.66	3.9	3.7	3.4	3.34	3.62	3.36	3.44

% of MSW Waste Generation

	1987	1994	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Generation	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Diversion	12%	35%	34%	35%	33%	31%	30%	31%	29%	30%	32%	32%	33%	36%	35%	35%	35%	36%
Disposal	88%	65%	66%	65%	67%	70%	70%	69%	71%	70%	68%	68%	67%	64%	65%	65%	65%	64%

[1] Table 1.1, 2001 State of Vermont Revised Solid Waste Management Plan

[2] Population Estimate, Vermont. U.S. Census. http://census.gov

Table 7b. Vermont generation, diversion and disposal totals for municipal solid waste. Includes tonnages, per capita breakdowns and percentage rates, using diversion rates which exclude the 34,830 tons of scrap metal estimate used in historic rate calculations. This exclusion has been applied to diversion/generation rates retroactively to 2001 when it was first applied.

	1987 [1]	1994 [1]	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Generation	350000	474800	570750	563564	576797	597811	577449	569612	609497	579689	571446	613517	592981	566042	552297	597254	557302	584235
Diversion	42000	164830	195930	199301	189401	182562	149319	151577	154217	148459	157173	171818	173024	178796	170326	183737	173258	190797
Disposal	308000	309970	374820	364263	387396	415249	428130	418035	455281	431230	414273	441699	419957	387246	381971	413517	384044	393438
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Per Capita MSW Generation (Tons/Year)	0.65	0.81	0.95	0.93	0.95	0.98	0.94	0.92	0.98	0.94	0.92	0.99	0.95	0.91	0.88	0.95	0.89	0.93
(Pounds/Day)	3.58	4.46	5.21	5.11	5.18	5.35	5.14	5.06	5.40	5.13	5.04	5.41	5.23	4.99	4.84	5.22	4.88	5.11
Per Capita MSW Diversion (Tons/Year)	0.08	0.28	0.33	0.33	0.31	0.30	0.24	0.25	0.25	0.24	0.25	0.28	0.28	0.29	0.27	0.29	0.28	0.30
(Pounds/Day)	0.078505	1.55	1.79	1.81	1.7	1.63	1.33	1.35	1.37	1.31	1.39	1.52	1.53	1.58	1.49	1.61	1.52	1.67
Per Capita MSW Disposal (Tons/Year)	0.58	0.53	0.62	0.6	0.64	0.68	0.70	0.68	0.74	0.70	0.67	0.71	0.68	0.62	0.61	0.66	0.61	0.63
(Pounds/Day)	3.15	2.91	3.42	3.3	3.48	3.72	3.81	3.71	4.03	3.81	3.66	3.90	3.70	3.41	3.34	3.62	3.36	3.44

% of MSW Waste Generation

	1987	1994	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Generation	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Diversion	12%	35%	34%	35%	33%	31%	26%	27%	25%	26%	28%	28%	29%	32%	31%	31%	31%	33%
Disposal	88%	65%	66%	65%	67%	69%	74%	73%	75%	74%	72%	72%	71%	68%	69%	69%	69%	67%

[1] Table 1.1, 2001 State of Vermont Revised Solid Waste Management Plan

[2] Population Estimate, Vermont. U.S. Census. http://census.gov

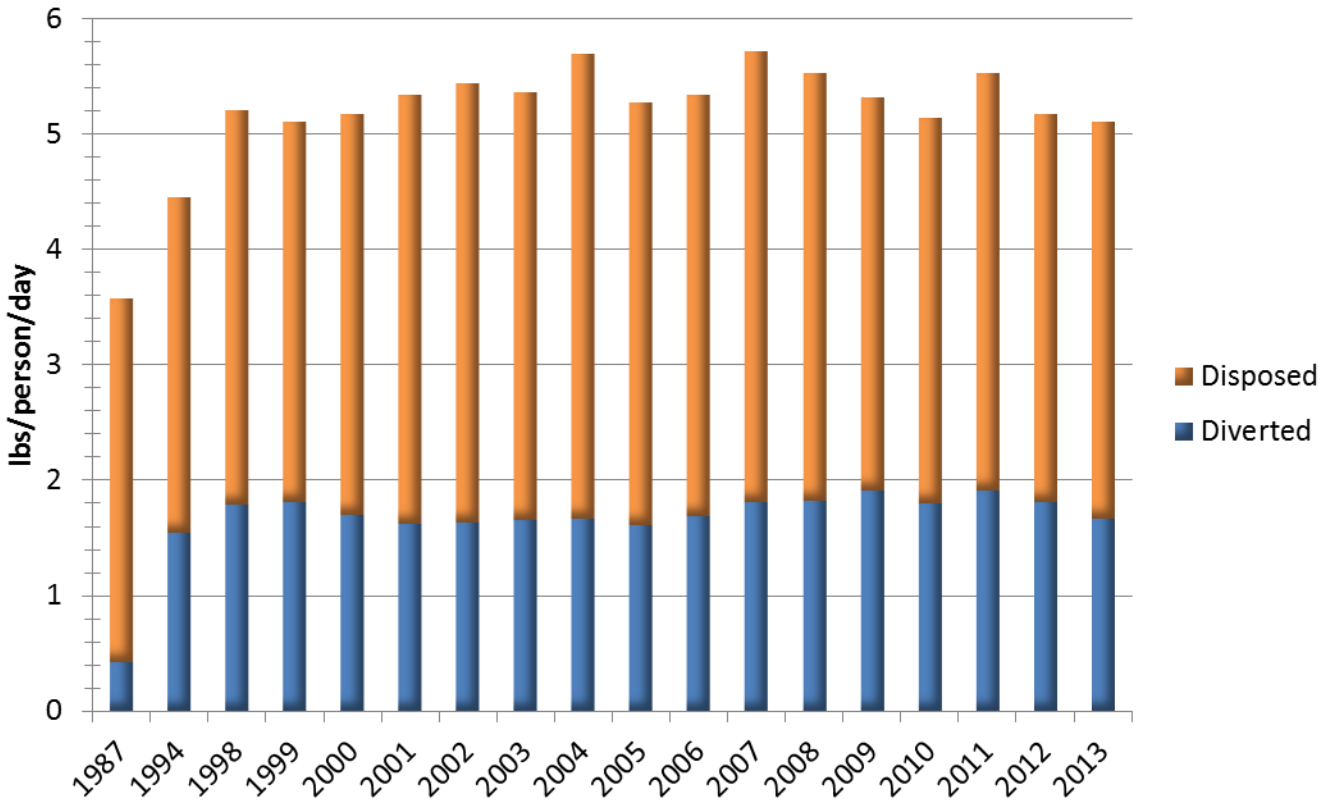

Figure 3: Pounds of waste generated per day per person (disposed + diverted) by Vermonter

IV. Other Material Management Activities – Not included in disposal or diversion tonnages

Construction and Demolition Materials

As described in the Disposal section above, Construction and Demolition (C&D) materials have historically been excluded from the materials tracked in the disposal and diversion tonnages outlined above. These materials are difficult to track, not only due to their inclusion within MSW loads transported for disposal, but also due to the significant reuse of materials occurring outside of the Solid Waste system. In addition, there are challenges with C&D like improper on-site disposal through burning and burial.

In 2013, C&D materials generated by Vermonters were reported as being directly disposed in Vermont landfills (Table 2), used as road base in Vermont landfills (Table 4) and estimated as being 12.85% of the of the solid waste tonnages disposed of in Vermont landfills (Table 5). In total this reporting indicates that 64,752 tons of C&D materials were generated and disposed of by Vermonters in 2013. A significant amount of C&D material was also likely recycled or reused during this time. However, only a small component of this recycled material was managed by a Vermont solid waste facility and therefore reported to the Program. 2013 saw the opening of Vermont's first dedicated C&D recycling facility. Opening on November 4, 2013, the facility only reported two months of 2013 data to the Program. During these two months, the facility received a total of 607 tons of mixed C&D materials and reported having sent 99 tons of materials to a market. At this point, the Program is unable to determine a diversion rate for this facility, as a significant portion of the marketable materials are stored onsite until a sufficient load is accumulated for shipment. With only two months of data, the shipment of these amassed loads cannot be accounted for.

It is anticipated that the diversion of C&D materials through recycling or reuse will increase in coming years. With the establishment of this first C&D recycling facility, other solid waste facilities have seen the potential in this type of program and are adopting more active separation programs to collect and market the valuable C&D materials. Additionally, July 2014 saw the adoption of Act No. 0175, which outlined several changes to the Vermont solid waste system, including a requirement for active diversion of architectural waste (a subset of C&D materials), from certain commercial construction and demolition projects. This recycling program will begin in January of 2015.

Biosolids

Septage and biosolids are byproducts of wastewater treatment and regulated as solid wastes in Vermont. There are three main methods of management available for biosolids, namely, treatment followed by land application, landfilling and incineration. The Solid Waste Management Program only receives reporting on the tonnages disposed of within Vermont landfills. However, the Residuals Management Section of the State's Watershed Management Division collects more detailed information on management practices from the wastewater treatment facilities and provides that data to the Solid Waste Management Program (Table 8). The amounts of biosolids generated and managed in Vermont are reported in a variety of units, and are uniformly converted by the Residuals Management Section to dry tons. These dry tons are then converted to a wet weight on the assumption of 15% solids so that all reported data is more standardized.

Table 8. Estimated quantities of biosolids managed in-state and out-of-state as reported to the Residuals Management Section from Vermont biosolids generators.

Management Option	In-State (wet tons)	Out-of-State (wet tons)	Total (wet tons)	Percent of Total	Percent Managed
Beneficial Uses:					
Land Application	3,721	0	3,721	6.6%	
EQ Biosolids	4,167	1,634	5,801	10.2%	
Subtotal	7,888	1,634	9,522		16.8%
Non-Beneficial Uses:					
Landfill	46,242	0	46,242	81.4%	
Incineration[3]	0	1,010	1,010	1.8%	
Subtotal	46,242	1,010	47,252		83.2%
Total:	54,130	2,644	56,774	100%	100%
Percent of Totals	95.3%	4.7%			

In comparison to the 46,242 wet tons (6,936 dry tons) of biosolids reported as being sent for Vermont disposal in 2013, Vermont landfills only reported receiving 22,015 wet tons of biosolids. Some of the discrepancy between these two reported values can be accounted for by the difference in percent solids. The Residuals Management Program standardized the reported tonnages from processing facilities to 15% solids; however, biosolids must typically be of greater percentage solids in order to be eligible for landfill disposal. In order for the dry tonnage totals reported by the processors and the landfills to be equivalent, the landfilled percent solids would have to be approximately 35%. A brief review of landfill disposal records indicates that an approximation of the true percent solids delivered to the landfill is closer to 26%, or approximately 5,724 dry tons. Though there remains some discrepancy between the two reported values, it is likely that these differences are due to reporting and conversion methodologies.

Hazardous Waste

Household hazardous waste (HHW) and conditionally exempt generator (CEG) hazardous waste is collected and managed at several fixed full-time facilities in the state and at numerous collection events hosted by municipalities throughout the year. Information on the materials collected over the course of the year is collected through the ReTRAC™ online reporting system in a manner similar to the solid waste facility reporting, as described earlier. This data is summarized in an annual HHW Survey Results report (Appendix B). A total of 525 tons of combined HHW and CEG materials were collected in 2013, a 12% increase over the 460 tons collected in 2012 (Table 9). As noted in the report, a change has occurred in the use of conversion factors for calculating the collected tonnages of these hazardous materials. The shift in conversion factors used may account for some of the increase between 2012 and 2013.This increase in collection occurred despite a slight decline in the percentage of households participating, although it should be noted that tracking the number of participating households is a challenge given the number of different events reporting on participation and the various methodologies by which this information may be collected.

Table 9. Summary of historic hazardous waste collections and participation.

	2013	2012	2011	2010	2009	2008	2007	2006
Total HHW and CEG tons	525	460	467	489	566	436	444	521
% participating VT households	7%	9%	7%	6%	8%	9%	7%	6%
Pounds collected per household (avg.)	62	34	47	46	45	30	39	44

Mercury Programs

In 2007, Act 149 effectively banned the knowing disposal of products containing mercury within Vermont Landfills and Extended Producer Responsibility programs for collection and recycling of mercury were established for thermostats in 2008 and for mercury-containing lamps in 2012.

Mercury-containing thermostats are collected and reported on by the Thermostat Recycling Corporation to the State of Vermont. This program collected 15.48 pounds of mercury in 2013; this is the equivalent of approximately 2,114 mercury thermostats. Mercury-containing lamps are collected and reported on by the National Electrical Manufacturers Association over a program collection year which runs July 1st – June 30th annually. Approximately 135,260 mercury containing lamps were collected and recycled by this program during the 2013 calendar year.

Vermont Electronic Recycling Program

The Vermont Electronic Recycling Program (E-cycles) was first implemented in July of 2011. This program provides no-cost electronic device recycling for covered entities and devices. The program operates on a fiscal year of October 1st to September 30th and therefore reporting on the diversion of these electronic devices is not comparable to the annual reporting period of this report.

Annually, the E-cycles Program prepares and submits a report to Legislature satisfying the obligations of reporting under 10 V.S.A §7559 (chapter 166). The 2014 E-cycles Report to the Legislature can be found here: http://www.anr.state.vt.us/dec/e-waste/e-DocDefs.htm and describes the operations of the Program from October 1, 2012 until September 30, 2013. During this period, 4,865,266 pounds of electronic devices were diverted from landfills. The remainder of 2013 data will be presented in the 2015 E-cycles Report to Legislature upon completion of the current E-cycles reporting year.

PaintCare

In May of 2013, Vermont Legislature passed paint product stewardship legislation (Act 58) that establishes free paint collection sites at retailers and permitted solid waste facilities across the State, funded by a small fee appended to paint sales in Vermont. This program is implemented by a stewardship organization called PaintCare, who worked with the Solid Waste Program in 2013 to develop the final Vermont Paint Stewardship Program Plan. The program officially launched on May 1, 2014, with more than 56 collection sites that are expected to continue to grow in number as more retailers voluntarily sign up to participate. The diversion of architectural paints in 2014 through this program will reduce the amount of paint products that have typically been reported in the annual household hazardous waste survey (above). Tonnages or volumes of paint successfully recycled through this program will reported to the State in coming years, and will be included in future Diversion and Disposal Reports.

Appendix A – Total tonnages of materials listed by individual solid waste management entities (independent towns grouped together)

Solid Waste Management Entity	Addison County Solid Waste Management District	Bennington County Regional Commission	Central Vermont Solid Waste Management District	Chittenden Solid Waste District	Greater Upper Valley Solid Waste Management District	Lamoille Regional Solid Waste Management District	Londonderry Group	Mad River Resource Management Alliance	Northeast Kingdom Solid Waste Management District	Northwest Vermont Solid Waste Management District	Rutland County Solid Waste District	Solid Waste Alliance Communities	Southern Windsor/Windham Counties Solid Waste Management District	Tri-Town Alliance	White River Alliance	Windham Solid Waste Management District	Independent Towns
Number of Reporting Facilities	6	7	13	20	3	13	1	3	32	9	20	7	8	1	3	21	17
Number of Towns	19	8	18	18	10	12	5	8	48	17	17	10	13	3	8	19	19
Population (2010 Census)	31170	17931	51522	156515	18265	26679	3287	19734	46726	45491	47279	13817	31291	7316	8792	37451	62084
Households (2010 Census)	11769	7745	22117	61815	7765	10906	1478	7797	19288	17966	19953	5786	13475	2886	3971	16298	25292
Households per Facility	1962	1106	1701	3091	2588	839	1478	2599	603	1996	998	827	1684	2886	1324	776	1488
Vermont Generated Materials Managed																	
Organics	750.5	0.0	3795.7	12944.3	0.0	1386.5	0.0	0.0	361.6	20.1	482.0	28.0	14.1	0.0	0.0	335.7	779.0
Single Stream Recyclables	801.5	3408.5	9156.9	44335.7	353.5	3840.9	0.0	136.1	54.7	58.3	18032.7	100.3	200.3	226.1	84.1	88.0	8416.5
Containers -Recycling/Reuse	0.0	81.3	169.0	0.0	161.6	24.0	130.3	41.6	1017.7	825.8	1280.5	72.8	630.8	0.0	344.7	2394.9	676.6
Fibers - Recycling/Reuse	53.1	1109.8	302.9	2386.3	314.1	11.7	198.7	33.0	2772.4	5594.4	3903.7	167.2	1066.5	43.3	204.8	4100.6	5022.3
Other - Recycling/Reuse	355.6	2288.9	669.3	21148.6	59.6	5154.2	180.5	40.9	803.1	506.0	4484.4	118.9	549.2	30.9	150.4	1894.3	1586.7
Municipal Solid Waste	12609.4	35747.9	51414.4	136466.8	582.3	19377.1	728.3	6290.4	2351.6	1109.6	30203.6	2216.8	4037.1	1026.2	5751.9	32832.0	366007.3
Construction and Demolition - Disposal	5766.1	189.6	206.1	12784.9	0.0	14.5	807.2	907.7	175.0	188.3	9307.9	518.5	2579.5	0.0	0.0	1185.5	5828.0
Other - Disposal	71.8	131.9	1000.0	1049.0	0.0	3885.6	65.0	2044.9	450.3	0.0	86764.3	8.0	50.7	0.0	110.0	885.0	26703.7
Transferred to Vermont Facility																	
Organics	49.8	0.0	0.0	3763.2	0.0	0.0	0.0	0.0	66.3	0.6	110.0	0.0	0.0	0.0	0.0	0.0	0.7
Single Stream Recyclables	3693.8	3000.4	9140.8	3163.6	353.5	3862.8	0.0	201.9	57.7	58.3	752.5	100.3	218.1	226.1	84.1	405.0	8672.4
Containers - Recycling/Reuse	0.0	397.2	55.4	0.0	0.0	2.0	127.3	25.5	442.7	159.7	311.6	62.8	209.5	0.0	339.2	694.0	80.4
Fibers - Recycling/Reuse	53.1	634.5	146.9	70.9	52.0	11.7	142.4	27.8	699.4	173.6	1201.1	163.5	560.9	43.3	196.8	1114.2	237.5
Scrap Metal - Recycling	0.0	44.4	0.0	75.6	34.9	6.7	0.0	0.0	6.5	0.0	160.1	79.1	0.0	0.0	0.0	21.2	21.4
Other-Recycling/Reuse	3.7	6.1	0.0	619.9	2.6	80.3	0.0	5.2	8.8	19.3	21.8	4.6	0.0	0.0	29.3	20.8	8.1
Municipal Solid Waste	12609.1	16278.8	48568.8	117691.1	394.3	19459.9	728.3	628.5	1664.5	760.8	29187.1	1636.5	1268.5	1026.2	5751.9	26080.6	30116.2
Other - Disposal	5839.4	206.8	187.9	7499.0	0.0	18.8	807.2	0.0	131.2	152.5	9620.9	407.0	1463.5	0.0	0.0	1672.7	1580.0
Transferred **Out-Of-State**																	
Organics	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	236.0	0.0
Single Stream Recyclables	623.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Containers	0.0	0.0	113.2	0.0	161.6	0.0	0.0	16.1	270.0	29.1	0.0	0.0	184.6	0.0	0.0	0.0	8.0

Fibers	0.0	0.0	144.2	0.0	263.1	0.0	0.0	5.2	6.8	0.0	0.0	0.0	359.9	0.0	0.0	0.0	85.5
Other Recyclables	0.0	0.0	0.9	0.0	21.3	0.0	0.0	0.0	1.4	0.0	67.4	0.0	107.4	0.0	0.0	0.0	30.6
Municipal Solids Waste	0.0	20125.4	495.1	18751.7	188.0	0.0	0.0	0.0	102.9	315.0	1883.3	580.3	2771.6	0.0	0.0	11465.0	289.7
Other - Disposal	0.0	0.0	18.3	7862.0	0.0	0.0	0.0	0.0	0.0	29.8	3556.5	77.2	1055.9	0.0	0.0	0.0	193.7
To **Market**																	
Single Stream Recyclables	0.0	711.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31473.7	0.0	0.0	0.0	0.0	0.0	0.0
Containers	0.0	0.0	0.0	2972.6	0.0	0.0	3.1	0.0	212.5	1310.2	1303.8	0.1	82.8	0.0	5.5	479.8	58.5
Fibers	0.0	1509.1	11.7	32788.4	0.0	0.0	48.3	0.0	1981.4	8543.8	3408.0	0.0	127.7	0.0	0.0	2676.7	4177.5
Scrap Metal	271.0	1884.1	375.5	1363.0	0.0	254.7	110.5	64.4	236.7	241.9	376.0	17.1	258.4	30.9	108.1	498.4	221.5
Other Materials	137.3	61.6	170.9	3041.8	0.8	20.8	0.0	0.0	545.1	18.9	2079.7	3.6	44.3	0.0	8.0	76.1	56.5
Onsite **or Local End-Use**																	
Organics Composting	721.0	0.0	3795.7	9179.1	0.0	1378.7	0.0	0.0	180.0	15.5	371.1	22.0	0.0	0.0	0.0	176.7	765.3
Local Reuse	15.8	0.0	778.1	7004.4	0.0	0.0	24.0	0.0	295.0	9.2	4.0	12.9	99.5	0.0	0.0	1.6	188.9
Textile Reuse	0.0	0.0	0.0	69.6	0.0	7.0	48.0	0.0	0.0	0.0	14.8	7.7	16.8	0.0	5.0	47.1	0.0
Landfill Alternative Daily Cover - C&D and Wood	0.0	0.0	0.0	0.0	0.0	0.0	0.0	929.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4204.9
Landfill Alternative Daily Cover - Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1294.3		0.0	0.0	0.0	0.0	0.0	0.0	0.0	22774.9
Landfilled - Municipal Solid Waste	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5601.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	345788.0
Landfilled - Construction and Demolition (C&D	0.0	0.0	0.0	0.0	0.0	0.0	0.0	907.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6137.2
Landfilled - Other	57.0	0.0	1000.0	10149.0	0.0	8192.9	65.0	810.1	437.0	359.0	83414.0	8.0	134.0	0.0	110.0	370.2	84254.8
Inert Wastes (Clean Wood, Gravel/Road/Ditch Debris, Mining Wastes)	0.0	0.0	0.0	0.0	0.0	7.9	0.0	736.9	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	81295.4

SUMMARY OF 2013 VERMONT HHW/CEG WASTE PROGRAMS

All Solid Waste Districts and Alliances, in alphabetical order

	HHW/CEG Material Collected (all materials in tons)†	Addison SWMD	Bennington CRC	Central Vermont SWMD	Chittenden SWD	Greater Upper Valley SWD	Lamoille River SWMD	Londonderry Group	Mad River RMA	Northeast Kingdom WMD	Northwest SWMD	Rutland County SWD	Solid Waste Alliance	Southern W/W Counties	Tri-Town Agreement	Windham SWD	White River Alliance
1	Acids	0.34	0.27	0.56	1.82	0.2	0.12	0.1	0.07	0.27	0.4	0.16	0	0	0.27	0.2	0.07
2	Aerosols	0.56	1.07	3.20	4.8	0.5	0.57	0.15	0.25	0.28	0.97	0.76	0.32	1.64	0.12	0.13	0.26
3	Bases	0.21	0.03	0.84	1.93	0.28	3.5	0.31	0.35	0.14	0.35	0	0	0	0.28	0.91	0.25
4	Flammables & Solvents	5.33	6.65	7.88	43.76	0.02	3.13	2.06	4.12	0	6.51	9.02	0	1.28	1.07	0.18	2.31
5	Glycols (Antifreeze)	5.56	1.34	1.76	8.16	0.87	0	0	0	0.44	0.5	0.93	0.04	1.97	0.22	1.09	0
6	Oxidizers	0.02	0.04	0.1	1.56	0.01	0	0	0	0	0	1.29	0	0	0.03	0.02	0.01
7	Lead Paint Chips & Debris	0.04	0	0	0.53	0	0	0	0	0	0	0	0	0	0	0	0
8	Paints – Latex	9.9	0	11.20	41.99	0	0	0	0	0	6.25	0.03	0	0	0	0.47	0
9	Paints – Oil	8.89	11.76	3.92	24.93	2.09	3	0.94	0.2	3.58	3	0.53	3.44	3.93	1.26	1.31	0.44
10	Paints – Non-process Resins	2.89	1.6	7.00	11.81	1.25	0	0	0	5.24	4.58	1.60	0	4.4	1.23	0	0
11	Pesticides	0.86	0.74	1.87	8.49	0.62	1.73	0	0	0.31	1.24	0.39	0	2.6	0.39	1.01	0
12	Reactives	0.01	0	0	0.23	0.04	0.02	0.41	0	0.01	0	0	0	0	0.31	0.03	0
13	Toxics	*To be reported in 2014*															
14	Photo Chemicals	*To be reported in 2014*															
15	Waste Oil – Uncontaminated	10.46	0	3.16	21.65	0	3.17	0	0	7.6	2.43	4.61	0.17	0	0	1.06	0
16	Waste Oil – Contaminated	0	0	0	3.36	0.75	0.79	0	0	0	0	0	0	2.18	0	1.31	0
17	Waste Oil – Oily Debris	2	0	0	6.3	0	0	0	0	0.4	0.2	0	0	0	0	0.2	0
18	Waste Oil – Oil Filters	2.95	0	0	1.63	0	0	0	0	2.75	0	1.68	0	0	0	0.41	0
19	Mercury – Flouroescent Tubes	4.36	0	0.52	22.22	0.41	0	0	0.26	1.36	0.06	2.32	0.08	0	0.06	0.44	0
20	Mercury – Other Lamps	0	0	0.15	0	0.03	0	0	0.09	0.75	0.13	1.91	0	0	0.14	1.11	0
21	Mercury-Added Products	0.11	0.47	0	0.14	0.05	0	0	0.02	0	0.13	0	0	0.7	0	0	0
22	Mercury – Elemental	0	0	0.1	0	0	0	0	0.01	0	0	0.01	0	0	0.01	0	0
23	Alkaline Batteries	*To be reported in 2014*															
24	Rechargeable Batteries	*To be reported in 2014*															
25	Lead-Acid Batteries	*To be reported in 2014*															
26	Other misc. products*	3.15	0.15	0	0	0	2	0	0	0	6.39	2.05	0	0	0	0.35	3.38
	Demographics																
	Household Units in Area††	11,769	7,745	22,117	61,815	7,765	10,906	1,478	7,797	19,288	17,966	19,953	5,786	13,475	2,886	16,298	3,971
	Program Profiles																
	Number of Events Held	n/a	2	6	n/a	2	2	2	2	n/a	n/a	2	2	7	4	n/a	2
	Total Program Costs	$ 218,861	$ 45,416	$ 106,468	$ 549,571	$ 30,772	$ 22,836	$ 17,797	$ 32,969	$ 51,926	$ 91,963	$ 103,272	$ 24,690	$ 45,249	$ 19,609	$ 13,326	$ 57,836
	# of households served	1452	255	718	9290	329	422	162	390	3661	867	863	291	508	193	587	323
	# of businesses served	108	0	8	733	5	18	2	43	3	2	65	13	6	0	5	0
	% household participation	12%	3%	3%	15%	4%	4%	11%	5%	19%	5%	4%	5%	4%	7%	4%	8%
	Total HHW/CEG Collected (tons)	57.64	24.12	42.26	205.31	7.12	18.03	3.97	5.37	23.13	33.14	27.29	4.05	18.7	5.39	10.23	6.72
	Total CEG Collected (tons)	6.28	0	0	73.37	0	0	0.33	0.38	0.8	1	3.23	0.21	0	0	0	0
	Total HHW Collected (tons)	51.36	24.12	42.26	131.94	7.12	18.03	3.64	4.99	22.33	32.14	24.06	3.84	18.7	5.39	10.23	6.72
	Avg. HHW/per household (tons)	0.035	0.095	0.059	0.014	0.022	0.043	0.022	0.013	0.006	0.037	0.028	0.013	0.037	0.028	0.017	0.021
	Avg. CEG/per business (tons)	0.058	-	0.000	0.100	0.000	0.000	0.165	0.009	0.267	0.500	0.050	0.018	0.000	-	0.000	-

SEE VERMONT TOTALS FOR EACH MATERIAL ON PAGE 2

*Includes small amounts of miscellaneous products, like alkaline and rechargeable batteries, fireworks, etc. that are not widely collected throughout the State, but may be in the future.

† All reported materials are converted to tons using VT Solid Waste Program Combined HHW Conversion Factors. See cover page for details.

†† Household estimates were derived from the US Census Bureau: *Population, Housing Units, Area and Density: 2010*.

SUMMARY OF 2013 VERMONT HHW/CEG WASTE PROGRAMS

All Independent Towns, in alphabetical order

Colors represent groups of independent towns that shared HHW events and costs; data for group is reported under one town.

	HHW/CEG Material Collected (all materials in tons)	Barton	Bennington	Burke	Bristol	Canaan	Coventry	Fairfax	Franklin	Hartford	Highgate	Lowell	Newport City	Salisbury	Stamford	St. Johnsbury	Woodford	VERMONT TOTALS
1	Acids		0.42		0.1	0	0.14	0	0					15.19	0	0		20.7
2	Aerosols		0.12		0.25	0	0.52	0	0					0	0	0.06		16.5
3	Bases		0.54		0.21	0	0.21	0	0.1					0.07	0	0.18		10.7
4	Flammables & Solvents		1.1		0.13	0.43	0.17	0	0.64					0.33	0	0.6		96.7
5	Glycols (Antifreeze)		0.44		0	0	0.49	0	0					0	0	0		23.8
6	Oxidizers		0.08		0.04	0	0.01	0	0					0	0	0		3.2
7	Lead Paint Chips & Debris		0		0	0	0	0	0					0	0	0		0.6
8	Paints – Latex		1.48		0	0	0.33	0	0					0	0	0		71.7
9	Paints – Oil		0.88		1.05	0.26	0	0	0					0	0	0		75.4
10	Paints – Non-process Resins		0.44		0	0	0	0	0.26					0	0	0		42.3
11	Pesticides		1.32		0	0	0.31	0	0					0	0	0		21.9
12	Reactives				0	0	0.01	0	0					0	0	0		1.1
13	Toxics																	
14	Photo Chemicals																	
15	Waste Oil – Uncontaminated		0		0	0	0	0	0					0	0	0		54.3
16	Waste Oil – Contaminated		0		0	0	0	0	0					0	0	0		8.4
17	Waste Oil – Oily Debris		0		0	0	0	0	0					0	0	0		9.1
18	Waste Oil – Oil Filters		0		0	0	0	0	0					0	0	0		9.4
19	Mercury – Flouroescent Tubes		0.13		0	0	0.01	0	0					0	0.05	0.09		32.4
20	Mercury – Other Lamps		0.14		0	0	0.03	0	0					0	0	0.02		4.5
21	Mercury-Added Products				0	0	0.05	0	0					0	0	0		1.7
22	Mercury – Elemental		0.04		0	0	0.57	0	0					0	0	0		0.7
23	Alkaline Batteries																	
24	Rechargeable Batteries																	
25	Lead-Acid Batteries																	
26	Other misc. products*		0.75		0	0	1.2	0	0					0	0	0		19.4
	Demographics																	
	Household Units in Area††	1,192	6,246	730	1,585	439	5,004	1,591	547	4,446	1,311	340	1,855	444	334	3,158	180	260,417
	Program Profiles																	
	Number of Events Held		2		3	2	2	2	2					2	2	2		52
	Total Program Costs		$ 15,759		$ 10,220	$ 2,441	$ 21,935	$ 7,046	$ 3,375	$ 6,561				$ 6,148	$ 5,193	$ 2,899		$ 1,514,139
	# of households served	-	150	-	97	24	175	167	31	102	-	-	-	85	31	61	-	21,234
	# of businesses served	-	0	-	0	0	2	3	0	0	-	-	-	0	0	6	-	1,022
	% of households participating	-	2%	-	6%	5%	3%	10%	6%	2%	-	-	-	19%	9%	2%	-	7%
																		-
	Total HHW/CEG Collected (tons)		7.88		1.78	0.69	4.05	0	1	0								508
	Total CEG Collected (tons)		0		0	0	0	0	0	0				0	0	0		86
	Total HHW Collected (tons)		7.88		1.78	0.69	4.05	0	1	0				15.59	0.05	0.95		439
	Avg. HHW/per household (tons)	-	0.053	-	0.018	0.029	0.023	0.000	0.032	0.000	-	-	-	0.183	0.002	0.016	-	0.8
	Avg. CEG/per business (tons)																	0.08

*Includes small amounts of miscellaneous products, like alkaline and rechargeable batteries, fireworks, etc. that are not widely collected throughout the State, but may be in the future.

† All reported materials are converted to tons using VT Solid Waste Program Combined HHW Conversion Factors. See cover page for details.

†† Household estimates were derived from the US Census Bureau: *Population, Housing Units, Area and Density: 2010*.

Appendix C – Listing of Vermont Facilities

SWID	Name	Type	District	2013 Re-TRAC Reporting?	Notes on Materials
AD002	Casella Waste Management, Inc. - Middlebury Hauling and Transfer	Transfer Station	Addison County SWMD	x	
AD004	Middlebury College	Categorical Disposal Facility	Addison County SWMD	x	Asphalt, concrete, clean wood
AD010	Vermont Natural Ag. Products	Compost Facility	Addison County SWMD	x	
AD060	Bridport Recycling Center	Recycling Center	Addison County SWMD	Captured in AD401	
AD183	Leicester Drop-off	Recycling Center	Addison County SWMD	Captured in AD401	
AD301	Lincoln Drop-off	Recycling Center	Addison County SWMD	x	
AD302	Monkton Town Drop Off	Transfer Station	Addison County SWMD	Captured in AD401	
AD303	Ripton Recycling Center	Recycling Center	Addison County SWMD	Captured in AD401	
AD304	Shoreham Recycling Center	Recycling Center	Addison County SWMD	x	
AD305	Starksboro Drop-off	Recycling Center	Addison County SWMD	Captured in AD401	
AD307	Weybridge Drop-off	Recycling Center	Addison County SWMD	Captured in AD401	
AD308	Whiting Recycling Center	Recycling Center	Addison County SWMD	Captured in AD401	
AD401	Addison SWMD Full Service Transfer Station	Transfer Station	Addison County SWMD	x	
BN081	Bennington Transfer Station	Transfer Station	Bennington County Regional Commission	x	
BN200	Northshire Transfer Station & Recycling Center	Transfer Station	Bennington County Regional Commission	x	
BN581	Pownal Transfer Station	Transfer Station	Bennington County Regional Commission	x	
BN671	Rupert Transfer Station	Transfer Station	Bennington County Regional Commission	x	
BN741	Shaftsbury Transfer Station	Transfer Station	Bennington County Regional Commission	x	
BN771	Manchester/Sunderland Transfer Station (Casella)	Transfer Station	Bennington County Regional Commission	x	
BN980	TAM Transfer Station	Transfer Station	Bennington County Regional Commission	x	
CA144	Hardwick/All Metals Recycling & Salvage Transfer Station	Transfer Station	Central Vermont SWD	x	
OG093	Bradford Recycling Depot	Recycling Center	Central Vermont SWD	x	
OG131	Chelsea Transfer Station	Transfer Station	Central Vermont SWD	x	
OG841	Tunbridge Transfer Station	Transfer Station	Central Vermont SWD	x	
OG941	Williamstown Recycling Center	Transfer Station	Central Vermont SWD	Permitted in 2013	
OG950	Fairlee Transfer Station	Transfer Station	Central Vermont SWD	x	
OG980	Rock of Ages	Categorical Mining Disposal	Central Vermont SWD	x	Waste from Cutting and Polishing
WA040	Vermont Compost Company, Fairmont Farms	Compost Facility	Central Vermont SWD	x	
WA080	Wilson Industrial Park	Transfer Station	Central Vermont SWD	x	
WA111	CV Landfill Transfer Facility	Transfer Station	Central Vermont SWD	x	

SWID	Name	Type	District	2013 Re-TRAC Reporting?	Notes on Materials
WA444	Montpelier Drop-Off & Recycling (Casella)	Transfer Station	Central Vermont SWD	x	
WA930	Budzyn Removal & Recycling	Recycling Center	Central Vermont SWD	x	tires only
WA950	Grow Compost of Vermont	Compost Facility	Central Vermont SWD	x	
CH045	All Cycle Waste, Inc. Transfer Station	Transfer Station	Chittenden SWD	x	
CH056	Burlington Drop Off -CSWD	Transfer Station	Chittenden SWD	x	
CH075	CSWD Wood and Yard Depot	Organics Drop-Off	Chittenden SWD	x	
CH080	Environmental Depot - CSWD	Hazardous Waste	Chittenden SWD	x	Hazardous Waste
CH172	Myers Recycling Facility	Recycling Center	Chittenden SWD	x	
CH200	Hinesburg Transfer Station - CSWD	Transfer Station	Chittenden SWD	x	
CH211	Essex Drop Off - CSWD	Transfer Station	Chittenden SWD	x	
CH224	Gauthier Trucking Recycling Facility	Recycling Center	Chittenden SWD	x	
CH451	Milton Drop Off - CSWD	Transfer Station	Chittenden SWD	x	
CH611	Richmond Drop Off - CSWD	Transfer Station	Chittenden SWD	x	
CH771	South Burlingon Drop Off - CSWD	Transfer Station	Chittenden SWD	x	
CH772	Marcelino Recycling	Recycling	Chittenden SWD	x	Asphalt, brick, concrete
CH865	Underhill Gravel and Disposal	Categorical Disposal Facility	Chittenden SWD	x	Brick, Concrete, clean wood, inert materials
CH930	CSWD - Williston Transfer Station	Transfer Station	Chittenden SWD	x	
CH940	Green Mountain Compost (CSWD Composting Facility)	Compost Facility	Chittenden SWD	x	
CH954	CSWD Materials Recovery Facility	Recycling Center	Chittenden SWD	x	
CH955	Burlington Area Transfer Station	Transfer Station	Chittenden SWD	x	
CH970	Ranger Asphalt	Recycling	Chittenden SWD	x	Asphalt, brick, concrete, clean wood, water treatment sludge
CH975	Essex Composting Facility	Compost Facility	Chittenden SWD	x	
CH980	Engineers Construction Disposal Site	Categorical Disposal Facility	Chittenden SWD	x	Asphalt, brick, concrete, highway construction debris
CH990	Beaudoins Disposal	Categorical Disposal Facility	Chittenden SWD	x	Brick, concrete, clean wood
OG010	Thetford Drop Off	Transfer Station	Greater Upper Valley SWMD	x	
OG200	Strafford Drop Off	Recycling Center	Greater Upper Valley SWMD	x	
WS511	Norwich Transfer Station	Transfer Station	Greater Upper Valley SWMD	x	
WS970	North Hollow Farm - Bowen	Compost Facility	Greater Upper Valley SWMD		Animal offal or carcasses
WS990	D&D Excavating Recycling Facility	Recycling Center	Greater Upper Valley SWMD	Permitted in 2013	Asphalt, brick and concrete
AD080	Bristol Landfill	Landfill	Independent	x	
AD720	Salisbury Landfill	Landfill	Independent	x	
AD840	Cook's Pit	Recycling Center	Independent	x	Asphalt, Brick and Concrete
BN070	TAM Organics Compost Facility	Compost Facility	Independent	x	
BN082	Town of Bennington Recycling Area	Recycling Center	Independent	x	

SWID	Name	Type	District	2013 Re-TRAC Reporting?	Notes on Materials
BN762	Stamford Transfer Station	Transfer Station	Independent	x	
CA400	Town of Burke	Recycling Center	Independent	x	
CA721	WSI St. Johnsbury Transfer Station, Inc.	Transfer Station	Independent	x	
CA970	Wise Worm Compost	Compost Facility	Independent	x	
ES900	Canaan Transfer Station	Transfer Station	Independent	x	
FR311	Casella Waste Management Transfer Station	Transfer Station	Independent	x	
FR560	Clokey/Crawford Compost Facility	Compost Facility	Independent		animal offal or carcasses only
FR590	Rodem Transfer Station	Transfer Station	Independent		
OL071	Barton Recycling Center	Recycling Center	Independent		
OL080	Newport Drop Off	Transfer Station	Independent	x	
OL510	Waste USA Landfill	Transfer Station	Independent	x	
OL990	Newport Center Recycling Center	Recycling Center	Independent	x	
WS280	Hartford Community Center for Recycling & Waste Management	Transfer Station	Independent	x	
WS305	Northeast Waste Services, LTD Recycling Fac.	Recycling Center	Independent	x	
LA010	Copper Mine Corporation	Categorical Disposal Facility	Lamoille Regional SWMD	X	Clean Wood
LA032	HA Manosh	Categorical Disposal Facility	Lamoille Regional SWMD	x	Asphalt, clean wood, inert materials
LA050	Hyde Park Recycle Drop-off Depot	Transfer Station	Lamoille Regional SWMD	x	Asphalt, inert materials, clean wood
LA121	Cambridge Transfer Station	Transfer Station	Lamoille Regional SWMD	x	
LA331	Lamoille District Transfer Station	Transfer Station	Lamoille Regional SWMD	x	
LA471	Lamoille Trash Service, Foss Ent.	Recycling Center	Lamoille Regional SWMD	x	
LA771	Lamoille District Transfer Station	Transfer Station	Lamoille Regional SWMD	x	
LA921	Wolcott Transfer Station	Transfer Station	Lamoille Regional SWMD	x	
LA930	Morrisville Drop Off	Transfer Station	Lamoille Regional SWMD	x	
LA940	Cochran Pit	Categorical Disposal Facility	Lamoille Regional SWMD	x	Asphalt, inert materials, clean wood
LA950	Eden Town Garage	Transfer Station	Lamoille Regional SWMD	<50 tpy	
LA980	Highfields Center for Composting	Compost Facility	Lamoille Regional SWMD	x	
OL100	Craftsbury Town Garage	Transfer Station	Lamoille Regional SWMD	x	
WA231	Lamoille District Transfer Station	Transfer Station	Lamoille Regional SWMD	x	
WH391	Londonderry Transfer Station	Transfer Station	Londonderry Group	x	
WA163	RTR Beverage Depot	Recycling Center	Mad River Resource Management Alliance	NOAV Issued	
WA470	Moretown Landfill	Landfill	Mad River Resource Management Alliance	x	
WA561	Northfield Transfer Station & Recycling Depot	Transfer Station	Mad River Resource Management Alliance	x	
WA921	Waitsfield Transfer Station, Inc.	Transfer Station	Mad River Resource Management Alliance	x	
CA040	Ryegate/Groton Recycling & Transfer Station	Transfer Station	Northeast Kingdom SWMD	x	

SWID	Name	Type	District	2013 Re-TRAC Reporting?	Notes on Materials
CA051	Waterford Transfer Station & Recycling Center	Transfer Station	Northeast Kingdom SWMD	x	
CA071	Barnet Transfer Station	Transfer Station	Northeast Kingdom SWMD	x	
CA112	Danville Recycling Facility	Recycling Center	Northeast Kingdom SWMD	x	
CA240	Kirby Transfer Station	Transfer Station	Northeast Kingdom SWMD	x	
CA384	NEKWMD Lyndonville Waste Mgmt Facility	Transfer Station	Northeast Kingdom SWMD	x	
CA500	AOT #7 Stump Dump	Categorical Disposal Facility	Northeast Kingdom SWMD	x	Concrete, brick, clean wood, highway debris, inert materials
CA511	Newark Transfer Station	Transfer Station	Northeast Kingdom SWMD	x	
CA571	Peacham Transfer Station	Transfer Station	Northeast Kingdom SWMD	x	
CA921	Wheelock/Sheffield Transfer Station	Transfer Station	Northeast Kingdom SWMD	x	
CA950	Paris Farm	Compost Facility	Northeast Kingdom SWMD	x	
CA980	Lyndon Stump Dump	Categorical Disposal Facility	Northeast Kingdom SWMD	x	Concrete, clean wood, inert materials
ES033	Norton Drop Off	Transfer Station	Northeast Kingdom SWMD	x	
ES061	East Haven Drop Off	Transfer Station	Northeast Kingdom SWMD	x	
ES101	Concord Transfer Station	Transfer Station	Northeast Kingdom SWMD	x	
ES391	Lunenburg Transfer Station	Transfer Station	Northeast Kingdom SWMD	x	
ES410	Brighton Recycling Facility	Recycling Center	Northeast Kingdom SWMD	x	
ES691	Gilman Renewal	Categorical Disposal Facility	Northeast Kingdom SWMD	x	Concrete, brick, sand, ash-hut debris
OG083	Newbury Recycling Center	Recycling Center	Northeast Kingdom SWMD	Permitted in 2013	
OG102	Corinth Recycling Facility	Recycling Center	Northeast Kingdom SWMD	x	
OL020	Greensboro Drop Off	Transfer Station	Northeast Kingdom SWMD	x	
OL030	Albany Drop Off Center	Transfer Station	Northeast Kingdom SWMD	x	
OL045	Jay/Troy Recycling Center	Recycling Center	Northeast Kingdom SWMD	x	
OL050	KNS Tire Transfer Station	Transfer Station	Northeast Kingdom SWMD	x	tires only
OL060	Brownington Recycling Center	Recycling Center	Northeast Kingdom SWMD	x	
OL065	Dane Farm	Compost Facility	Northeast Kingdom SWMD		
OL072	Austins Rubbish Recycling	Recycling Center	Northeast Kingdom SWMD	x	
OL073	Glover Recycling Center	Recycling Center	Northeast Kingdom SWMD	x	
OL200	Holland Drop Off	Transfer Station	Northeast Kingdom SWMD	x	
OL461	Morgan Transfer Station	Transfer Station	Northeast Kingdom SWMD	x	

SWID	Name	Type	District	2013 Re-TRAC Reporting?	Notes on Materials
OL911	Westmore Transfer Station	Transfer Station	Northeast Kingdom SWMD	x	
OL960	Derby Drop Off	Transfer Station	Northeast Kingdom SWMD	x	
OL965	Derby Stump Dump	Transfer Station	Northeast Kingdom SWMD	x	
OL980	Westfield Drop Off	Transfer Station	Northeast Kingdom SWMD	x	
WA300	Calais Depot	Recycling Center	Northeast Kingdom SWMD	Operating as 'Fast Trash'?	
WA320	Cabot Recycling Depot	Recycling Center	Northeast Kingdom SWMD	x	
FR020	Richford Stump Dump	Categorical Disposal Facility	Northwest Vermont SWMD	x	Asphalt, brick, concrete, clean wood
FR530	Canusa	Recycling Center	Northwest Vermont SWMD	x	
FR540	St. Albans Drop Off	Transfer Station	Northwest Vermont SWMD	x	
FR550	Montgomery	Transfer Station	Northwest Vermont SWMD	x	
FR570	Lareau Hillside	Categorical Disposal Facility	Northwest Vermont SWMD	x	Brick, concrete, clean wood, highway debris, street sweepings
FR580	Hudak Farm Composting Facility	Compost Facility	Northwest Vermont SWMD	x	
FR600	Georgia Recycling Facility	Recycling Center	Northwest Vermont SWMD	x	
GI011	Alburg Transfer Station	Transfer Station	Northwest Vermont SWMD	x	
GI251	Grand Isle Transfer Station	Transfer Station	Northwest Vermont SWMD	x	
GI421	North Hero Transfer Station	Transfer Station	Northwest Vermont SWMD	x	
RU003	Rutland County SWMD Materials Recovery Fac.	Recycling Center	Rutland County SWD	x	
RU020	Fisk Haines Compost Facility	Compost Facility	Rutland County SWD	x	
RU043	Mount Holly Transfer Station	Transfer Station	Rutland County SWD	x	
RU081	Brandon Transfer Station	Transfer Station	Rutland County SWD	x	
RU101	Castleton Transfer Station	Transfer Station	Rutland County SWD	x	
RU105	Hadeka Stone Recycling Center	Recycling Center	Rutland County SWD	x	Asphalt, brick, concrete
RU131	Clarendon Transfer Station	Transfer Station	Rutland County SWD	x	
RU151	Danby Transfer Station	Transfer Station	Rutland County SWD	x	
RU461	Pittsford Transfer Station	Transfer Station	Rutland County SWD	x	
RU501	Mount Tabor Transfer Station	Transfer Station	Rutland County SWD	x	
RU581	Poultney Transfer Station	Transfer Station	Rutland County SWD	x	
RU601	Proctor Transfer Station	Transfer Station	Rutland County SWD	x	
RU623	Rutland County Solid Waste District T.S.	Transfer Station	Rutland County SWD	x	
RU660	Rutland City Stump Dump	Categorical Disposal Facility	Rutland County SWD	x	Clean wood
RU724	Hubbard Brothers Transfer Station	Transfer Station	Rutland County SWD	x	
RU761	Killington Transfer Station	Transfer Station	Rutland County SWD	x	
RU901	Wallingford Transfer Station	Transfer Station	Rutland County SWD	x	

SWID	Name	Type	District	2013 Re-TRAC Reporting?	Notes on Materials
RU921	Wells Transfer Station	Transfer Station	Rutland County SWD	x	
RU934	West Rutland Recycling Facility	Recycling Center	Rutland County SWD	x	
RU960	Markowski Recycling Facility	Recycling Center	Rutland County SWD	x	Asphalt, brick, concrete
RU995	OMYA	Landfill	Rutland County SWD	x	
RU999	East Coast Rubbish Removal	Transfer Station	Rutland County SWD		
RU033	Fair Haven Transfer Station	Transfer Station	Solid Waste Alliance Communities	x	
RU061	Benson Transfer Station	Transfer Station	Solid Waste Alliance Communities	x	
RU141	Chittenden Transfer Station	Transfer Station	Solid Waste Alliance Communities	x	
RU311	Middletown Springs Transfer Station	Transfer Station	Solid Waste Alliance Communities	x	
RU681	Rutland Town Transfer Station	Transfer Station	Solid Waste Alliance Communities	x	
RU781	Shrewsbury Drop Off	Transfer Station	Solid Waste Alliance Communities	x	
RU801	Tinmouth Transfer Station	Transfer Station	Solid Waste Alliance Communities	x	
WH100	Rockingham/Westminster Transfer Station	Transfer Station	Southern Windsor/Windham Counties SWMD	x	
WS020	AOT #2 Disposal	Categorical Disposal Facility	Southern Windsor/Windham Counties SWMD	x	Asphalt, brick, concrete, clean wood, intert materials
WS090	Springfield Transfer Station	Transfer Station	Southern Windsor/Windham Counties SWMD	x	
WS111	Cavendish Transfer Station	Transfer Station	Southern Windsor/Windham Counties SWMD	x	
WS115	Wincycle	Recycling Center	Southern Windsor/Windham Counties SWMD	x	
WS331	Ludlow Transfer Station	Transfer Station	Southern Windsor/Windham Counties SWMD	x	
WS921	Weathersfield Transfer Station	Transfer Station	Southern Windsor/Windham Counties SWMD	x	
WS950	A.B.L.E. Waste Management Inc Transfer Station	Transfer Station	Southern Windsor/Windham Counties SWMD	x	
OG671	Randolph Transfer Station	Transfer Station	Tri-Town Alliance	x	
WS051	Barnard Transfer Station	Transfer Station	White River Alliance	x	
WS061	Bethel/Royalton Transfer Station	Transfer Station	White River Alliance	x	
WS960	Harveys Peavine Pit	Categorical Disposal Facility	White River Alliance	x	Clean Wood
BN612	Readsboro Recycling Center	Transfer Station	Windham SWMD	x	
BN961	Winhall Transfer Station	Transfer Station	Windham SWMD	x	
WH001	Fletcher Pit Recycling	Recycling Center	Windham SWMD	x	Asphalt, brick and concrete
WH010	Brattleboro Drop Off	Recycling Center	Windham SWMD	x	

SWID	Name	Type	District	2013 Re-TRAC Reporting?	Notes on Materials
WH025	Westminster Town Recycle Station	Recycling Center	Windham SWMD	Permitted in 2013	
WH070	Windham Solid Waste Management District	Recycling Center	Windham SWMD	x	
WH082	Brattleboro Salvage Transfer Station	Transfer Station	Windham SWMD	x	
WH083	Windham SWMD MRF, Transfer Station and Compost	Transfer Station	Windham SWMD	x	
WH120	WSWMD -- Marlboro Recycling Facility	Recycling Center	Windham SWMD	x	
WH130	WSWMD -- Newfane Recycling	Recycling Center	Windham SWMD	x	
WH140	WSWMD -- Putney Recycling Facility	Recycling Center	Windham SWMD	x	
WH170	WSWMD -- Vernon Drop-Off	Transfer Station	Windham SWMD	x	
WH181	Dover Drop Off	Transfer Station	Windham SWMD	x	
WH301	Jamaica Transfer Station	Transfer Station	Windham SWMD	x	
WH421	Townshend Transfer Station	Transfer Station	Windham SWMD	x	
WH891	Wardsboro Transfer Station	Transfer Station	Windham SWMD	x	
WH921	Whitingham Transfer Station	Transfer Station	Windham SWMD	x	
WH941	Wilmington Transfer Station	Transfer Station	Windham SWMD	x	
WH960	Stratton Transfer Station	Transfer Station	Windham SWMD	x	
WH970	Zaluzny Aggregate and Untreated	Recycling Center	Windham SWMD	x	Asphalt, brick, concrete, clean wood (ground for mulch)
WH980	Brattleboro Salvage Transfer Station	Transfer Station	Windham SWMD	x	